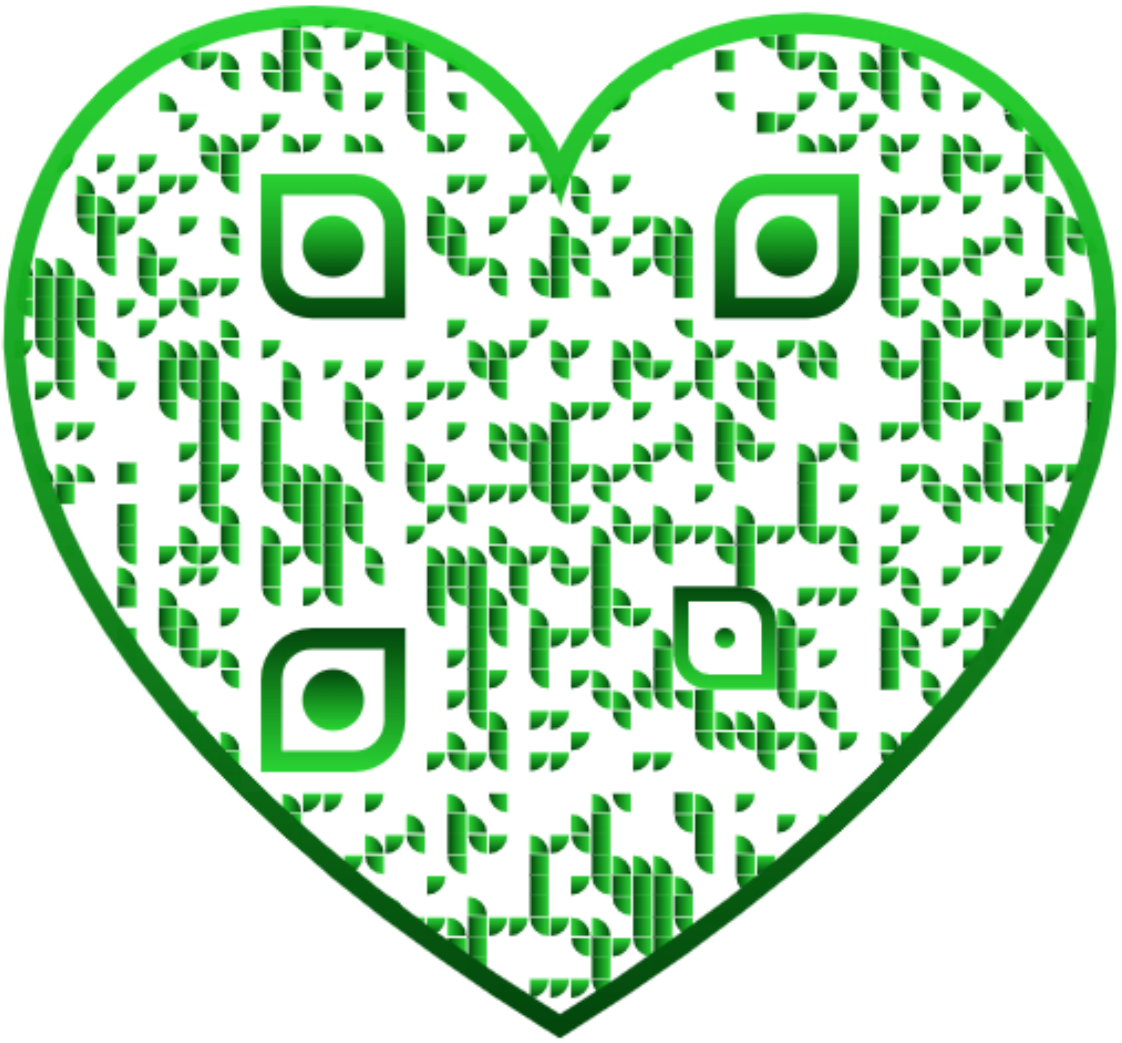
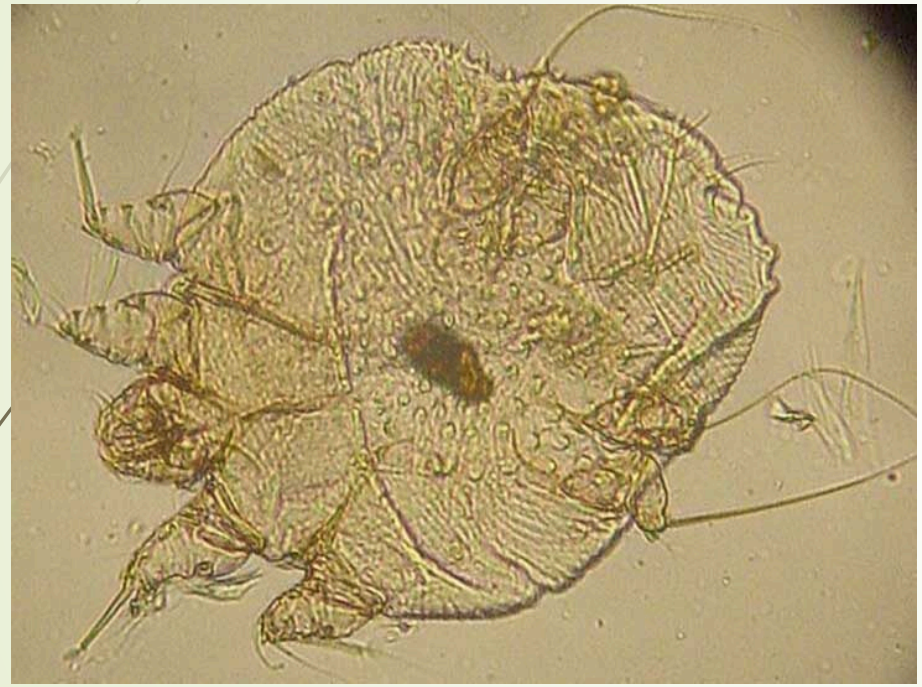
Parasitic infection

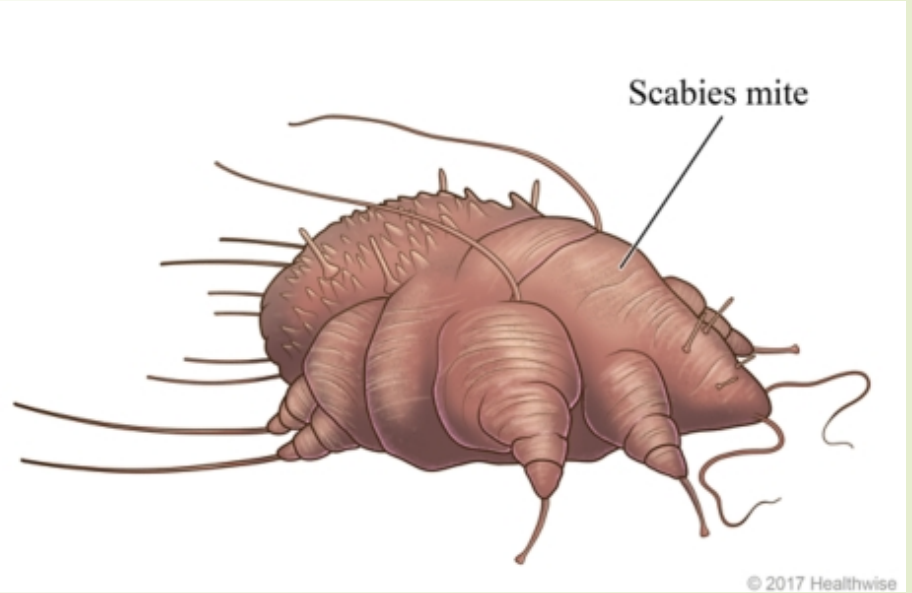
Dr :Niveen Almaisary



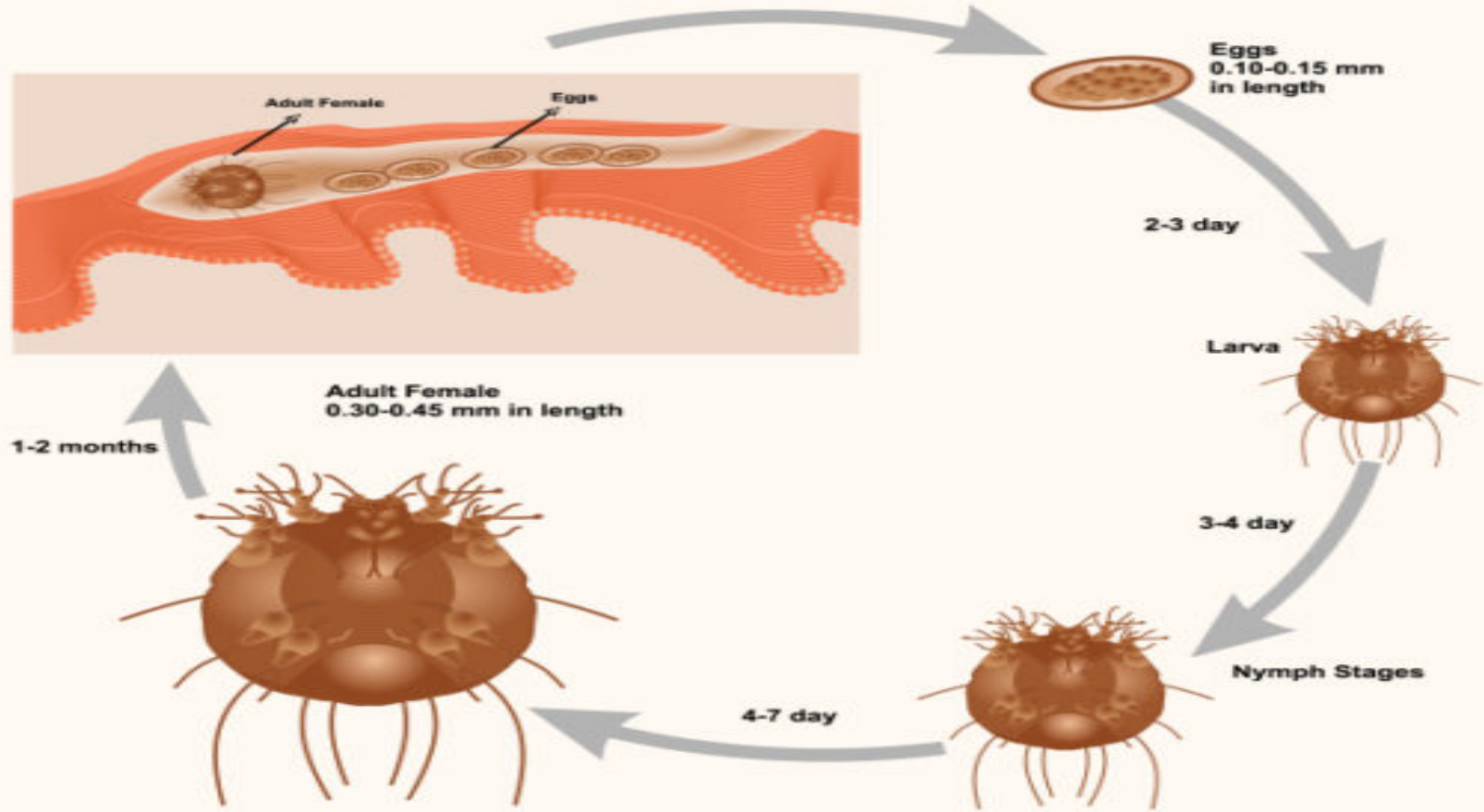
Scabies

- A very common infectious disease caused by a fertilized female mite called sarcoptes scabiei
- It associated with severe itching
- ***Usually transmitted :***
- Direct by close physical contact or indirect : by using clothes or bed of the patient
- Also contact with infected animals
- Away from the host scabies mites survive for 24 – 36hr




Scabies mite
© 2017 Healthwise

What is SCABIES?



Scabies,cont

- Can occur in any age or and in both sexes
- Itching sever especially at night 3-4 wks after infection occur

Typical locations of lesion :

- Finger webs, the flexor, surface of the wrists, the elbows, the axilla, the buttocks and genitalia and breasts of the women
- The face is often spared
- The typical lesions of scabies are burrows

Scabies, cont

- Scabies in infants & young children show more extensive distribution of burrows, vesicularpustular lesions
- Extensive eczematisation is often present
- Multiple crusted nodules on the trunk and limbs

- Complicalion
- Secondary bacterial infection
- Eczematous changes
- Acrophobia

: Clinical varient

- Scabies incognito
- Scabies in clean
- Nodular scabies
- Infant scabies
- Norwegian scabies

DDx :

- papular urticaria ,
- pediculosis corpories
- Eczema

DermNetNZ.org

: Diagnosis

- Mainly clinical
- Itching mainly at night
- Prsesence of burrows
- Distribution of the lesions
- Contact cases within family
- Demonstration of parasite under microscope

: Management

- Prophylactic measures :
  - early diagnosis & treatment
  - Treatment of other family members, disinfection and treatment of infected animals.
- Medical treatment :
  - treatment of 2nd infection & 2nd eczema
  - Systemic anti histamine for itching.
  - Scabicidals (topical) :
    - benzyl benzoate 25%
    - Crotamition 10%
    - Gama benzenc hexacloride 1%

,Scabies. Cont

- Permethrin cream 2.5% for child&5%for adult
- Oral ivermectin for sever & resistance cases.
- Intralesional Steriod injection for post scabietic nodules

Causes of post scabietic pruritus

- Irritation of skin by topical preparation
- Post scabietic nodules, pruritus
- acarophobia

SCABIES

CAUSES: PARASITE(SARCOPTES SCABIEI VAR + HOMINIS)

LESION: (BURROWS)

Figure 28-17. Scabies with burrows Papules and burrows in typical location on the finger web. Burrows are tan or skin-colored ridges with linear configuration with a minute vesicle or papule at the end of the burrow; they are often difficult to define.

Figure 28-19. Scabies with nodules Red-brown papules and nodules on the penis and scrotum; these lesions are pathognomonic for scabies, occurring at sites of infestation in some individuals.

Figure 28-20. Scabies with nodules A 60-year-old female with reddish brown nodules on L-breast persisting after treatment with ivermectin.

Figure 28-21. Scabies with hyperinfestation A 42-year-old Hispanic female with HTLV-I infection. Pruritus was minimal. Skin was hyperkeratotic and had a odor. Hundreds of burrows were seen on the back in Fig. 28-16.

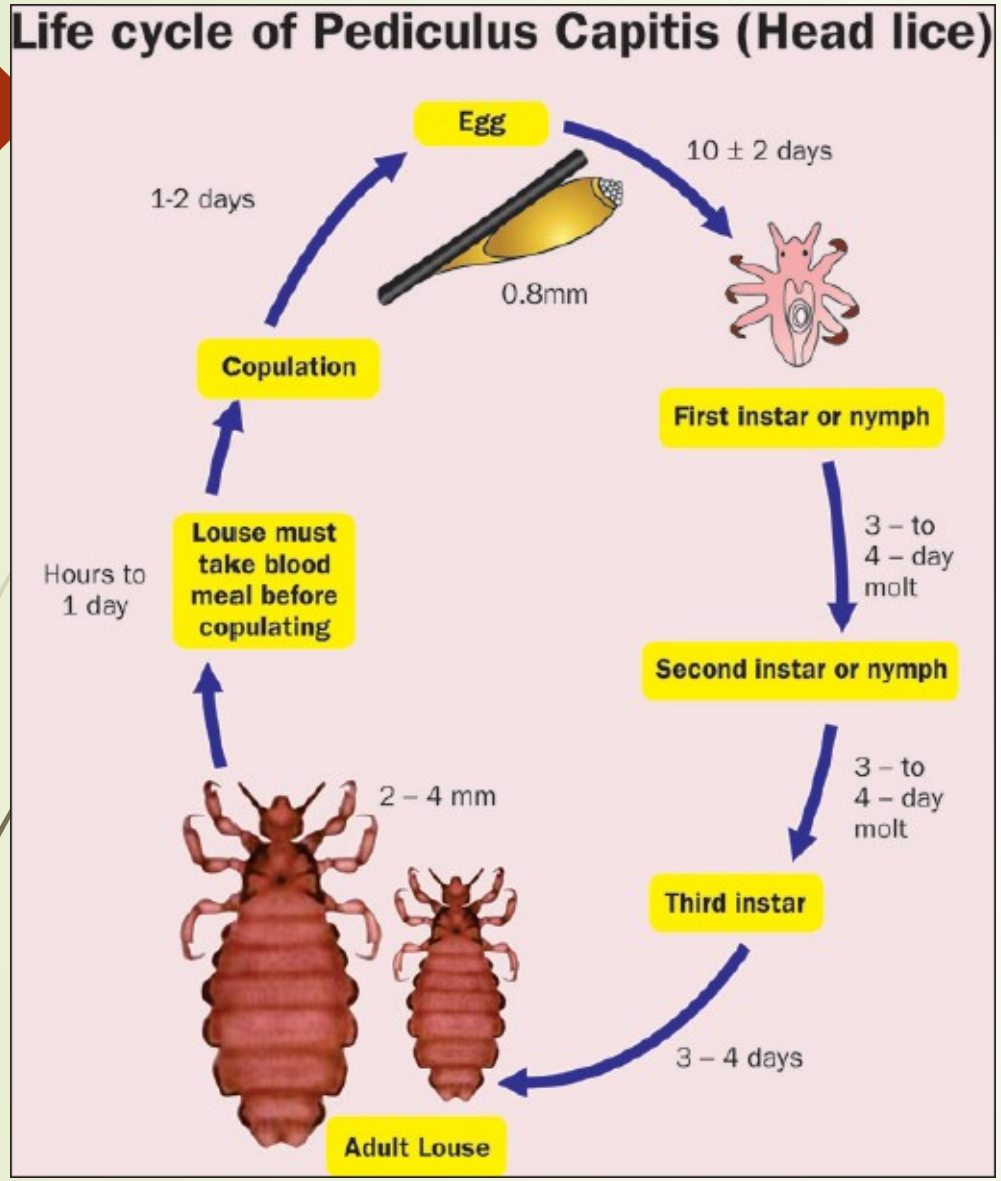
Figure 28-23. Scabies with multiple burrows A 42-year-old woman with HTLV-I infection and scabies with hyper-infestation (see Fig. 28-22). Multiple dark linear lesions on the back. Each of these lesions in an intraepidermal burrow created by a scabetic mite.

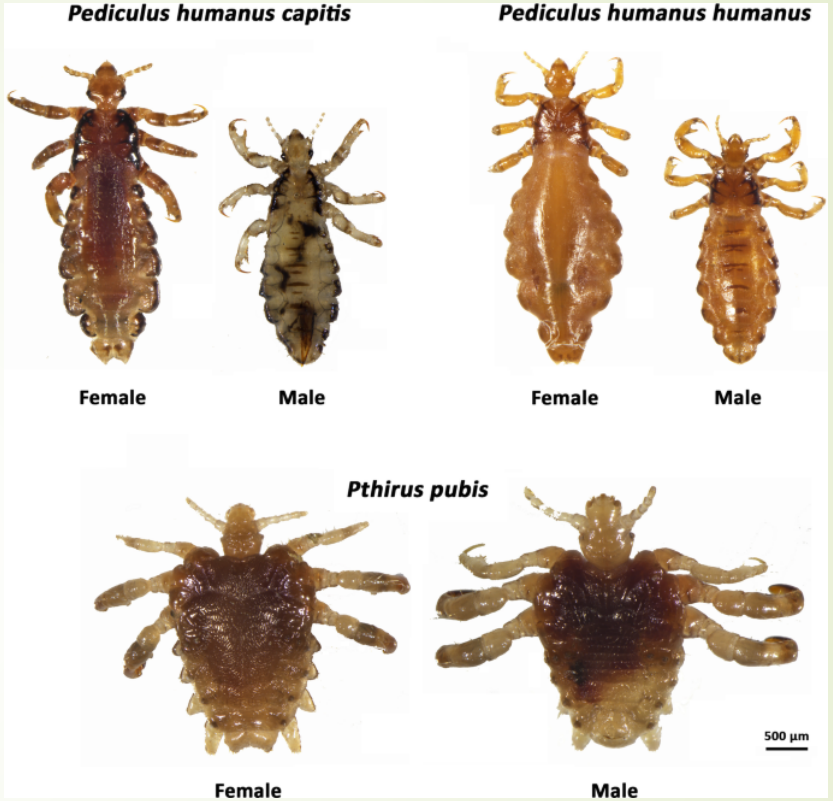
lice

- Lice are insects that live on human hair and clothing.
- Lice are wingless and have 6 legs on which are attached strong claws, which they use to grasp on tightly to hair shafts or clothing fibres.
- Head lice are the most common infestation in humans
- their eggs are called nits
- The medical term for an infection or infestation with lice is called “pediculosis

There are 3 types of lice that infest humans.

- 1. Pediculus humanus var. capitis: The head louse.
- 2. Pediculus humanus var. humanus
- Phthirus pubis: The pubic louse.


Life cycle of Pediculus Capitis (Head lice)
Egg
10 ± 2 days
1-2 days
0.8mm
Copulation
First instar or nymph
3 – to 4 – day molt
Hours to 1 day
Louse must take blood meal before copulating
Second instar or nymph
3 – to 4 – day molt
2 – 4 mm
Third instar
3 – 4 days
Adult Louse


Pediculus humanus capitis
Pediculus humanus humanus
Female
Male
Female
Male
Pthirus pubis
500 µm
Female
Male

Pediculosis capitis

The usual organism is Pediculus humanus capitis,

very prevalent especially in school children and crowded areas in most societies.

Occurs most commonly in children 3–11 years, girls > boys

The majority of infestations are acquired by direct head to head contact

The louse reaches maturity in approximately 10 days.

Head lice feed on human blood and itching from lice bites is a common symptom of this condition

(normally intensifies 3-4 weeks after the initial infestation).

Scalp pruritus is characteristic,

Pediculosis capitis

some may be asymptomatic

Secondary bacterial infection may occur from scratching

Pruritic papular lesions may occur on the nape of the neck, lymphadenopathy

concomitant head louse infection must always be considered in cases of scalp impetigo

The empty egg cases occur in greatest density on the parietal and occipital regions

SFS

Management

Live head lice can be treated by wet combing with fine-toothed comb;

chemical treatment if ineffective, e.g malathion,permtherin

Treat all affected contacts and repeat after 7–10 days

Causes of therapeutic failure for head lice include ***misunderstanding of instructions, non-adherence, resistance, failure to retreat after 7–10 days and reinfestation***

Clothing/body lice (Syn. Pediculus corporis)

associated with poor socioeconomic conditions.

The natural habitat is the clothing of its host, and lice only visit the skin to feed. Eggs are cemented to clothing fibers

Clinical features

Itching is the main complaint.

The body is often covered in excoriations

and/or secondary bacterial infection.

Post-inflammatory pigmentation occurs in longstanding disease

Lice and eggs should be sought in the clothing

Management

Bed linens and clothes should be decontaminated by hot washing.

Infested materials sealed in plastic bags may be used safely after 3 days.

Infested furniture, mattresses and box springs should be discarded or fumigated to destroy lice and nits

Crab lice (Syn. Phthiriasis pubis

known as Phtirus pubis.

contracted by close contact and are easily transmitted sexually.

The pubic hair is most common site

but lice can spread to other hairy parts of the body including axilla, beard, chest hair and thigh hair.

Eyelashes can also be affected

Clinical features

Itching, mainly in the evening and at night,

is the main symptom.

Inspection of affected areas will reveal lice on hairs close to the skin surface,

and louse eggs attached to the hair shafts

When pubic crab lice are identified other hairy areas of the body should be examined

Management

All hairy areas of the body should be treated at the same time.

Pubic lice are treated with the same insecticidal creams or lotions as pediculosis capitis.

with a second application after 7–10 days.

Eyelash infestations should be treated with permethrin 5% cream (washed off after 10 min) or only with petrolatum (applied twice a day for 8–10 days),

followed by mechanical removal of the nits.

Screen for associated sexually transmitted disease

Pediculosis (lice infestation)

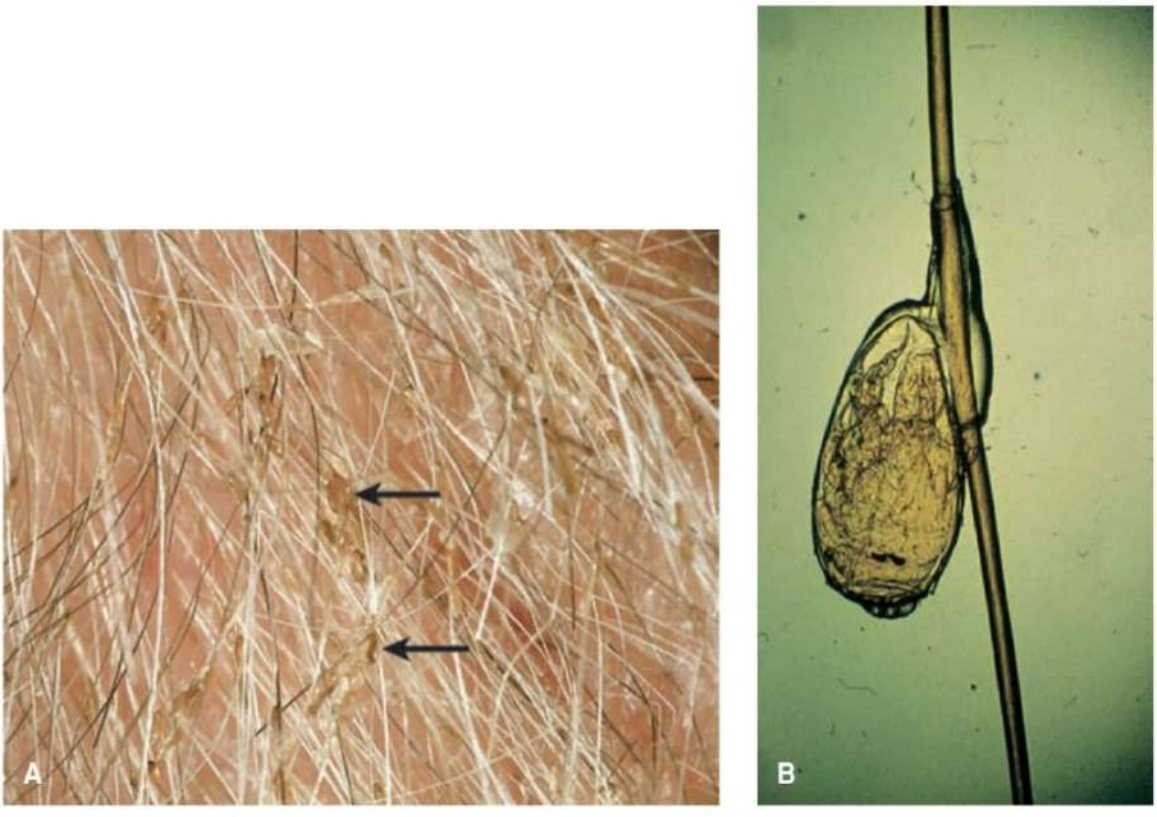


Figure 28-9. Pediculosis capitis: nits (A) Arrows: grayish-white egg capsules (nits) are firmly attached to the hair shafts, visualized with a lens. **(B)** Magnified, an egg with a developing head louse nymph attached to a hair shaft is seen.

Figure 28-10. Pediculosis corporis A 60-year-old homeless male. Multiple lesions secondary to excoriations, prurigo nodularis, and lichen simplex chronicus. Lice and nits are seen in the seams of clothing (inset).

Figure 28-11. Crab louse Adult female with an egg developing within her body.

Figure 28-12. Crab louse Crab louse (arrow) on the skin in the pubic region.

Figure 28-13. Crab lice in eyelashes A 10-year-old child. Crab lice (arrows) and nits on the upper eyelashes of a child; this was the only site of infestation.

Figure 28-14. Crab lice infestation: papular urticaria A 25-year-old with pruritus. Multiple inflammatory papules at sites of crab lice bites on the abdomen and the inner aspects of the thighs.

Leishmaniasis

is a disease caused by protozoan parasites that belong to the genus Leishmania

and is transmitted by the bite of certain species of sand fly.

Most forms of the disease are transmissible only from animals (zoonosis), but some can be spread between humans.

Human infection is caused by about 21 of 30 species that infect mammals.

One of the most common forms of the disease is cutaneous leishmaniasis that occurs most commonly ,over 90%

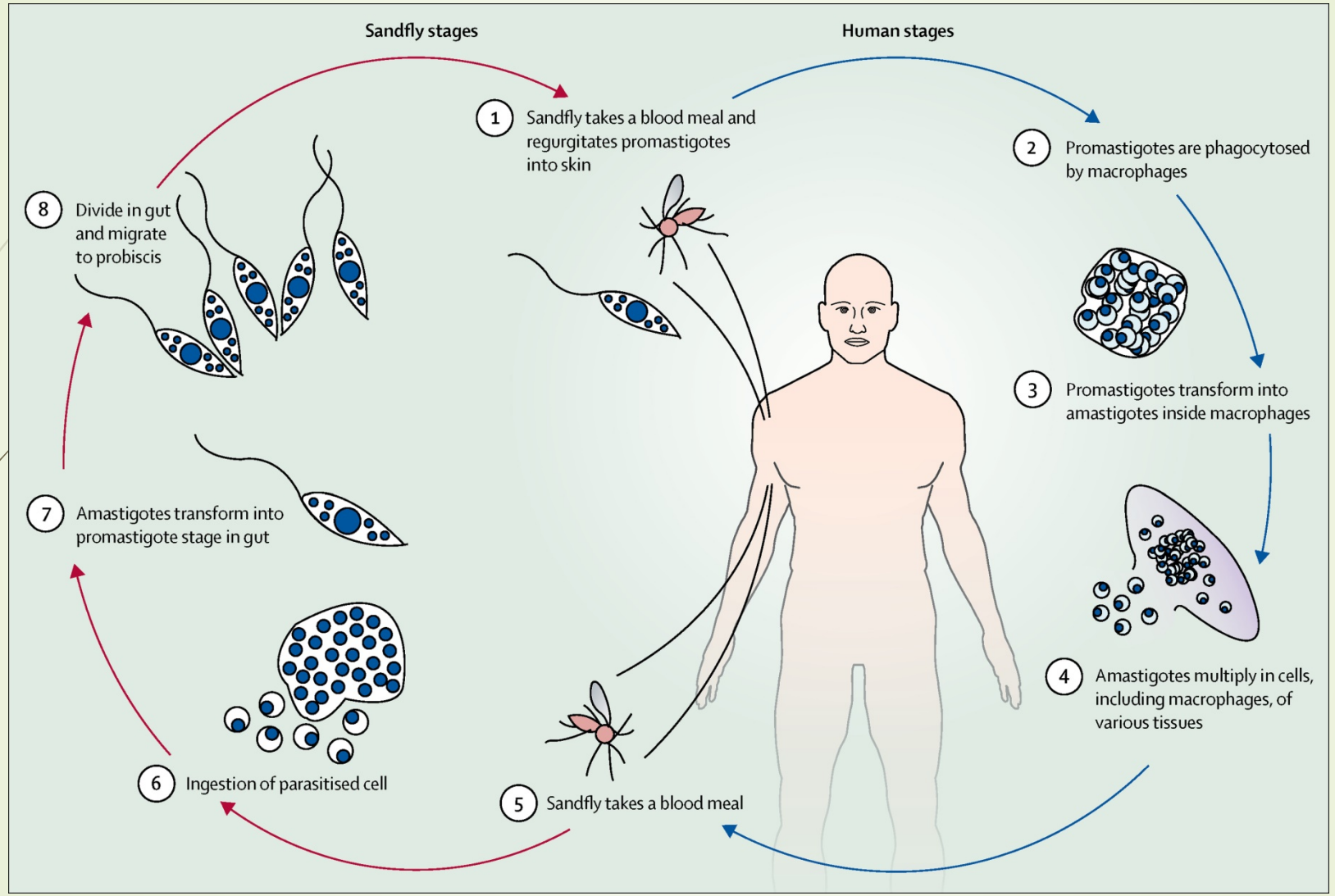
Life CycleThe organism is transmitted by the bite of several species of blood-feeding sand flies (Phlebotomus)

which carry the promastigote in the anterior gut and pharynx.

The parasites gain access to mononuclear phagocytes where they transform into amastigotes and divide until the infected cell ruptures.

The released organisms infect other cells.

The sandfly acquires the organisms during the blood meal; the amastigotes transform into flagellate promastigotes and multiply in the gut until the anterior gut and pharynx are packed. Dogs and rodents are common reservoirs


Sandfly stages
Human stages
1 Sandfly takes a blood meal and regurgitates promastigotes into skin
2 Promastigotes are phagocytosed by macrophages
3 Promastigotes transform into amastigotes inside macrophages
4 Amastigotes multiply in cells, including macrophages, of various tissues
5 Sandfly takes a blood meal
6 Ingestion of parasitised cell
7 Amastigotes transform into promastigote stage in gut
8 Divide in gut and migrate to probiscis

.. Visceral leishmaniasis is a severe form in which the parasites have migrated to the vital organs.

The most important species of Leishmania is L. donovani causes visceral leishmaniasis (Kala-azar, black disease, dumdum fever)

. Leishmaniasis is divided into 4 main clinical forms and is caused by parasitic protozoa of the genus Leishmania

:Cutaneous leishmaniasis

Cutaneous leishmaniasis is the most common form causing one or more ulcers on the skin.

start a small red papule up to 2 cm in diameter

Over several weeks, papules become darker and form ulcers with raised edges and central crater.

Ulcers can be moist and exude pus or dry with a crusted scab.

on exposed areas of the skin, especially the face and extremities.

Lesions may occur immediately after the bite or after weeks or months before causing any ulcers

:Mucocutaneous leishmaniasis

Lesions appearing 1-3 m months after being bitten.

Ulcers m ay only occur around the mucous membranes of the nose and mouth or may also involve skin lesions

without treatment, the entire nasal mucosa and palates become deformed with ulceration and erosion of the nasal septum, lips and palate

Mucosal lesions often are painful and become e sites of infection, sometimes leading to sepsis.

Diffuse cutaneous leishmaniasis

Disseminated and chronic skin lesions resembling lepromatous leprosy.

Initial skin lesion spreads locally ,and from which the disease disseminate to other parts of the skin, often involving large area .

Lesion are nodules that don't ulcerate .

The disease progresses slowly and become chronic and difficult to treat.

A
B
C
D

:Visceral leishmaniasis

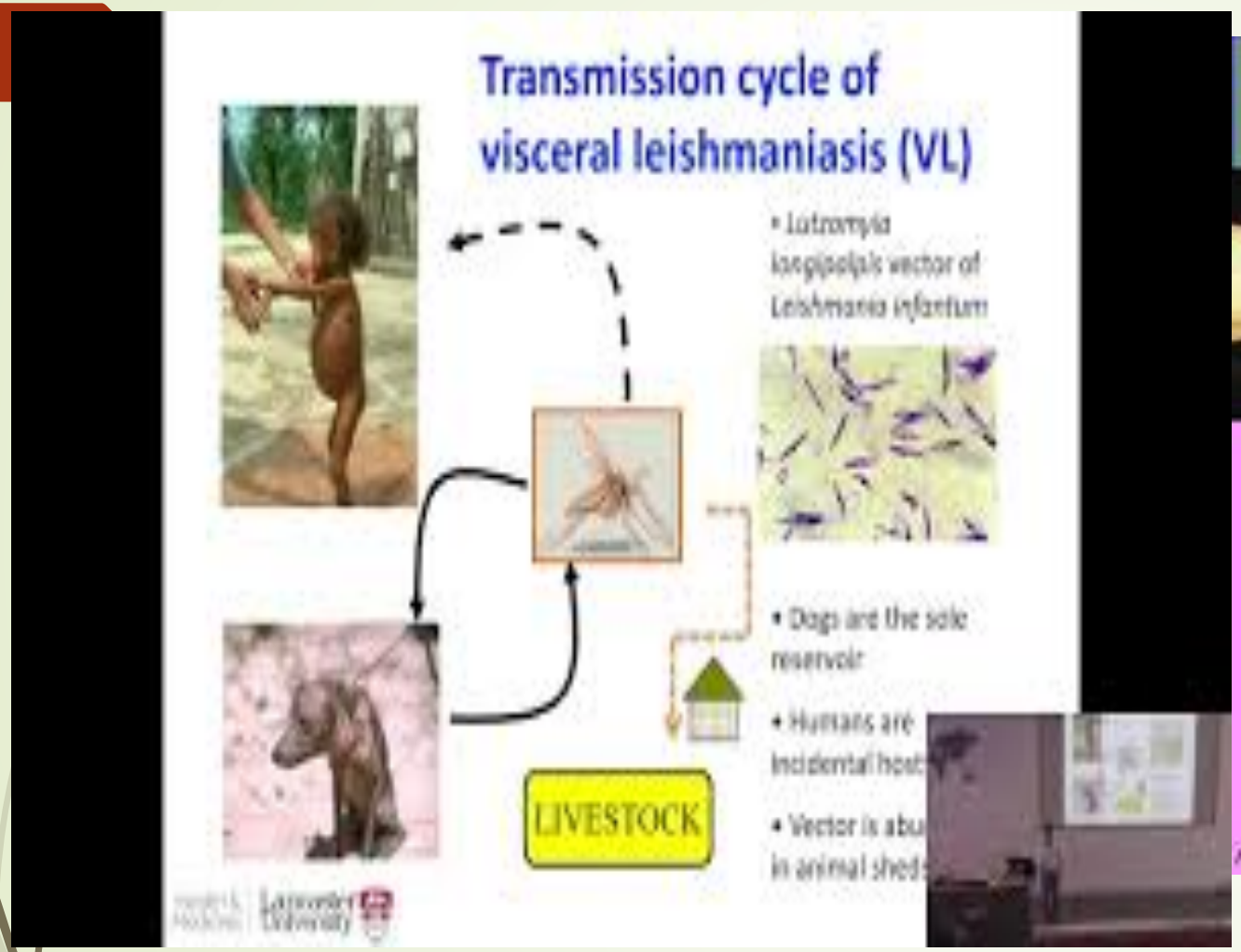
affects internal organs including the spleen, liver and lymph nodes.

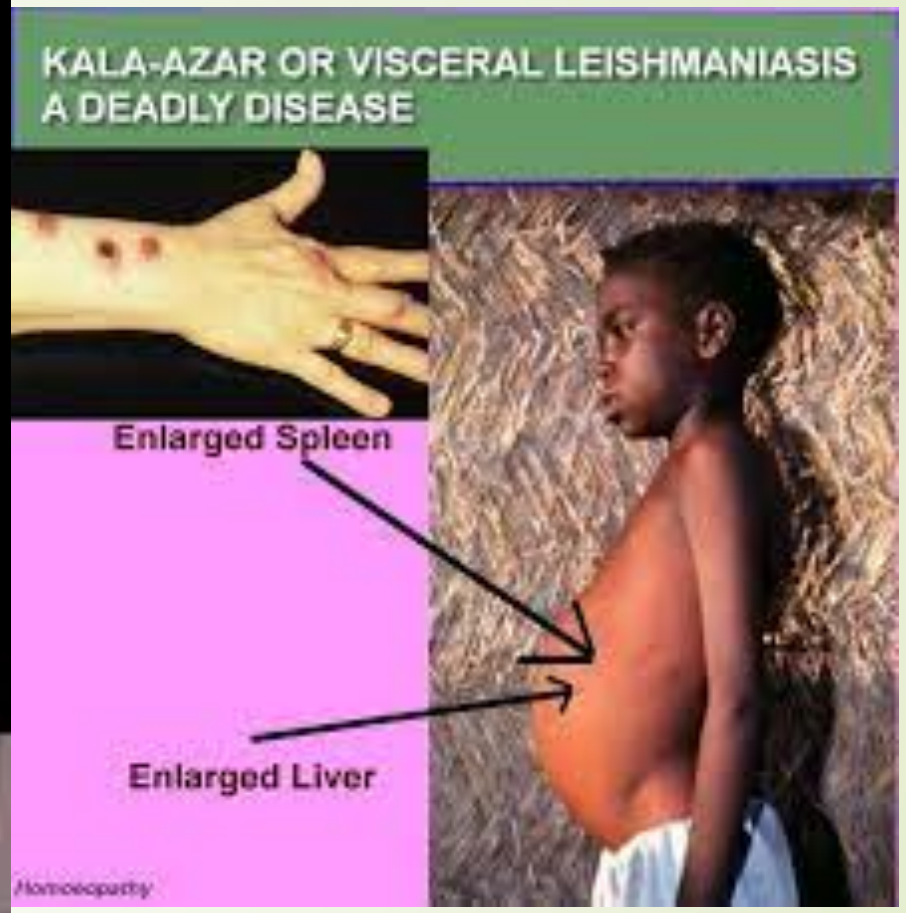
It is also known as “Kala azar’; because of the characteristic darkening (pigmentation) of the skin in patients with the disease.

Symptoms include bouts of fever, weakness, diarrhea, swollen glands.

Hepatosplenomegaly is common.

The disease may take different forms ranging from asymptomatic self-resolving disease to fulminant, life-threatening disease


Transmission cycle of visceral leishmaniasis (VL)
• Lutzomyia longipalpis vector of Leishmania infantum
• Dogs are the sole reservoir
• Humans are
LIVESTOCK


KALA-AZAR OR VISCERAL LEISHMANIASIS
A DEADLY DISEASE
Enlarged Spleen
Enlarged Liver

Diagnosis:

Leishmaniasis is diagnosed in the haematology laboratory by direct visualization of the amastigotes (Leishman-Donovan bodies).

Buffy-coat preparations of peripheral blood or aspirates from marrow, spleen, lymph nodes or skin lesions should be spread on a slide to make a thin smear, and stained with Leishman's or Giemsa's stain (pH 7.2) for 20 minutes.

Amastigotes are seen with monocytes or, less commonly in neutrophil in peripheral blood and in macrophages in aspirates

: Treatment

Most cases of cutaneous leishmaniasis resolve spontaneously without treatment, but this can take months or even years. Ulcers often leave unsightly scars

There are two common therapies containing antimony (known as pentavalent antimonials): meglumine antimoniate (Glucantime) and sodium stibogluconate (Pentostam).

Liposomal amphotericin B is effective in treating visceral leishmaniasis

Secondary infections should be treated with appropriate antimicrobial therapy.

Other treatments sometimes used for leishmaniasis include: Azole antifungal drugs: itraconazole, fluconazole, ketoconazole, zinc sulfate, and cryotherapy

THANK
YOU

Leishmanisis

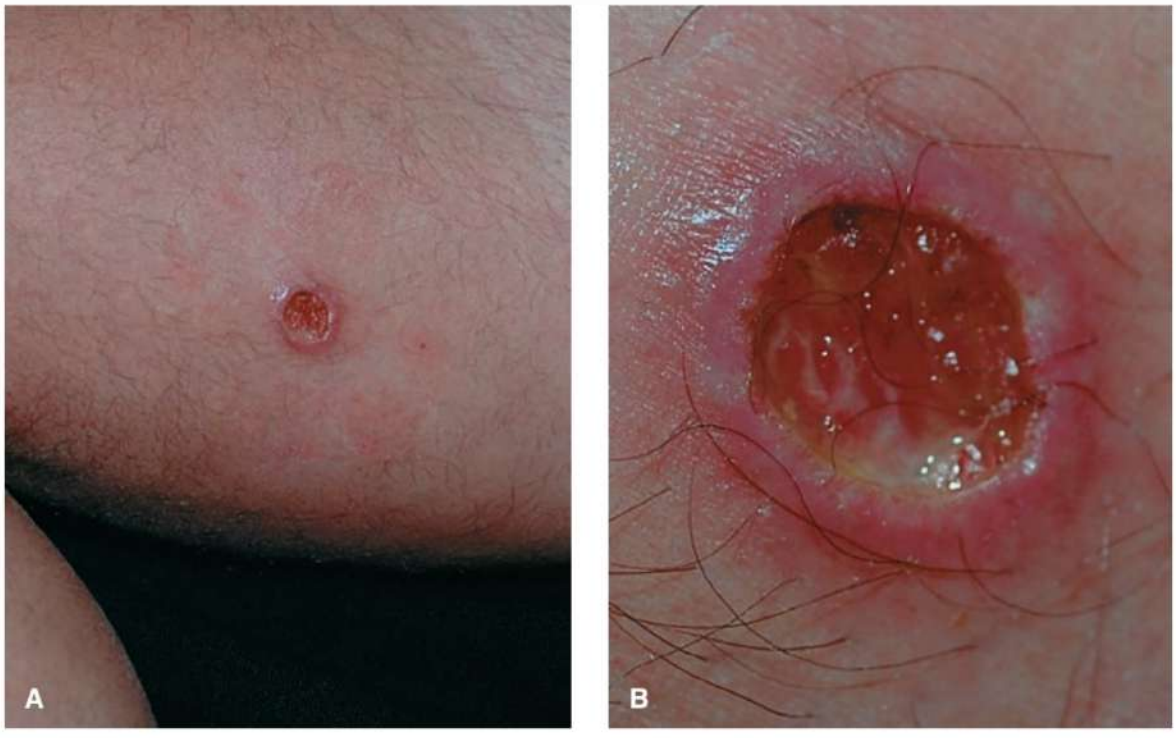


Figure 29-1. New World cutaneous leishmaniasis: ulcer on thigh A 42-year-old with HIV disease noted a painless lesion on the medial thigh 6 weeks after returning from Mexico **(A)** ulcer with rolled borders and base with granulation tissue **(B)**. Leishmania were seen on lesional biopsy. *L. mexicana* was isolated on tissue culture of lesional biopsy.

Figure 29-2. New World cutaneous leishmaniasis: chiclero ulcer A deep ulcer on the helix at the site of a sandfly bite. This variant typically occurs in leishmaniasis acquired in Central and South America.

Figure 29-3. Mucocutaneous leishmaniasis: espundia Painful, mutilating ulceration with destruction of portions of the nose. (Courtesy of Eric Kraus, MD.)

Figure 29-4. Old World cutaneous leishmaniasis: face A 7-year-old Jordanian girl with painful lesions on the cheeks for 6 weeks. **(A)** Large crusted nodules with surrounding edema on both cheeks. **(B)** Three weeks after successful therapy (sodium stibogluconate pentostam injections; 15 mg/kg per day IM injection for 21 days), lesions have healed with minimal residual erythema and no scarring. (Courtesy of Mohammad Tawara, MD.)

Figure 29-5. Old World cutaneous leishmaniasis Multiple, crusted nodules on the exposed back, arising at sites of sandfly bites. Many of the lesions resemble a volcano with a central depressed center, i.e., volcano sign.

Figure 29-6. Indian post-kala-azar dermal leishmaniasis. Coalescent erythematous dermal papules and nodules over the face in a picture similar to leonine facies. (Used with permission from Raj Kubba, MD.)

Treatment

Antimony-containing compounds meglumine antimoniate and sodium stilbogluconate (Fig. 29-4) are given systemically. Other drugs